CLAIMS

1. An electric motor comprising

a housing, comprising at least one rotor provided with magnetized regions and mounted rotatably about a rotor axis on bearing supports of the housing,

and comprising a stator having at least one stator unit, each stator unit including a set of first pole shoes, formed as claw poles, and a set of second pole shoes, formed as claw poles, which are disposed around the rotor axis, as well as a coil positioned following the rotor in the direction of the rotor axis and with its windings arranged to encircle the rotor axis, by means of which the first and second pole shoes can be magnetized,

the stator unit having two pole shoe elements of which a first pole shoe element has a first pole shoe carrier which extends transversely with respect to the rotor axis and is disposed on a side of the coil facing the rotor, as well as the first pole shoes formed integrally onto this carrier, which first pole shoes extend away from the first pole shoe carrier in a first direction approximately parallel to the rotor axis, and of which a second pole shoe element has a second pole shoe carrier which extends transversely with respect to the rotor axis and is disposed on a side of the coil facing away from the rotor, as well as the second pole shoes formed integrally onto this carrier, which second pole shoes also extend in the first direction away from the second pole shoe carrier approximately parallel to the rotor axis beyond the rotor, and a bearing support made of plastics being molded onto the second pole shoe carrier of the stator unit and is thereby secured to it.

2. An electric motor according to claim 1, wherein a connecting element which establishes a magnetic circuit between the pole shoe carriers is connected to the second pole shoe carrier to form a unit and the bearing support is molded onto this unit.

3. An electric motor according to claim 2, wherein the connecting element is formed as a sleeve.

4. An electric motor according to claim 2, wherein the bearing support is formed to engage into the connecting element.

5. An electric motor according to claim 1, wherein the bearing support is formed by means of injection molding.

6. An electric motor according to claim 2, wherein the connecting element is connected to the second pole shoe carrier by means of joining.

7. An electric motor according to claim 6, wherein the connecting element is welded to the second pole shoe carrier.

8. An electric motor according to claim 2, wherein the first pole shoe carrier is connected to the connecting element.

9. An electric motor according to claim 8, wherein the first pole shoe carrier is connected to the connecting element by means of joining.

10. An electric motor according to claim 2, wherein the connecting element forms a carrier for the coil.

11. An electric motor according to claim 2, wherein the connecting element and the second pole shoe carrier are provided with an electrically insulating coating on the side facing the coil.

12. An electric motor according to claim 11, wherein the first pole shoe carrier is provided with an electrically insulating coating on the side facing the coil.

13. An electric motor according to claim 11, wherein the coating has a thickness of less than 10 μm.

14. An electric motor according to claim 11, wherein the coating has a glass-like consistency.

15. An electric motor according to claim 1, wherein the entire pole shoe elements are provided with a corrosion-resistant coating.

16. An electric motor according to claim 1, wherein the second pole shoes overlap the coil.

17. An electric motor comprising

a housing, comprising at least one rotor provided with magnetized regions and mounted rotatably about a rotor axis on bearing supports of the housing,

and comprising a stator having at least one stator unit, each stator unit including a set of first pole shoes, formed as claw poles, and a set of second pole shoes, formed as claw poles, which are disposed around the

rotor axis, as well as a coil positioned following the rotor in the direction of the rotor axis and with its windings arranged to encircle the rotor axis, by means of which the first and second pole shoes can be magnetized, the first and second pole shoes lying on the same cylindrical surface which extends about the rotor axis and the one pole shoes being disposed in the gaps between the other pole shoes.

18. An electric motor according to claim 17, wherein the pole shoes disposed successively in an azimuthal direction around the rotor axis have identical angular spacings from each other.

19. An electric motor according to claim 17, wherein the first and second pole shoes extend so far in the first direction that their ends lie in a common plane running perpendicular to the rotor axis.

20. An electric motor according to claim 1, wherein the electric motor has a stator with two stator units and a rotor having a respective rotor unit associated with each stator unit, the rotor units being seated on a common shaft.

21. An electric motor according to claim 20, wherein the stator units are arranged in such a way that their pole shoes face each other.

22. An electric motor according to claim 20, wherein for both stator units, all pole shoes are disposed on the same cylindrical surface around the rotor axis.

23. An electric motor according to claim 20, wherein both of the stator units are of identical construction.

24. An electric motor according to claim 20, wherein holding positions of the rotor units, determined by magnetic effect, relative to the respective stator units, are rotationally displaced in relation to each other by half a pole space.